

**U.S. ENVIRONMENTAL PROTECTION AGENCY  
POLLUTION/SITUATION REPORT  
2015 Gold King Mine Release SITREP**



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Region 8**



**Subject:** SITREP #5  
Gold King Mine Release

San Juan County, Colorado  
Latitude: 37.8945 Longitude: -107.6384

**From:** Colorado Unified Command Situation Unit

**Date:** 08/13/2015

**Reporting Period:** 08/12/15 through 08/12/15

**Website:** [epa.gov/goldkingmine](http://epa.gov/goldkingmine)

**New information from current operational period and projected activities for next operational period are in bold text.** Historical information is in plain text.

## Executive Summary

On August 5, while investigating the Gold King Mine in Colorado, an EPA cleanup team triggered a release of mine wastewater into Cement Creek. The EPA is working closely with responders and local, state and tribal officials to monitor water contaminated by the release. The release's path flows through three of the EPA's regions - Region 8 (Colorado, Utah, Southern Ute Tribe, and Ute Mountain Ute Tribe); Region 6 (New Mexico), and Region 9 (Navajo Nation). The EPA has activated its Emergency Operations System to ensure coordination among its regions, laboratories and national program offices in Washington, D.C. **A Unified Command has been established in Durango, Colorado,** The EPA is coordinating with officials in Colorado, New Mexico, Utah, Southern Ute Tribe, Navajo Nation and the Ute Mountain Ute Tribe.

## 1. Introduction

### 1.1 Background

<b>Site Number:</b> A8K9RV	<b>Contract Number:</b>
<b>D.O. Number:</b>	<b>Action Memo Date:</b>
<b>Response Authority:</b> CERCLA	<b>Response Type:</b> Emergency
<b>Response Lead:</b> EPA	<b>Incident Category:</b>
<b>NPL Status:</b> not listed	<b>Operable Unit:</b>
<b>Mobilization Date:</b> 08/05/2015	<b>Start Date:</b> 08/05/15
<b>Demob Date:</b> TBD	<b>Completion Date:</b>
<b>CERCLIS ID:</b>	<b>RCRIS ID:</b>
<b>ERNS No.:</b>	<b>State Notification:</b> 08/05/15

The La Plata County Sheriff issued an order closing the Animas River to all watercraft from the north County line (San Juan County, Colorado) to the south County line (at the Colorado/New Mexico State line) until further notice. Furthermore, all such watercraft must be removed from the Animas River within the locations cited above. The decision was made after consultation with the EPA, CDPHE, the San Juan Basin Health Department, and representatives of the Southern Ute Indian Tribe. The order will remain in effect until it is determined that the river is safe

#### 1.1.1 Incident Category

#### 1.1.2 Site Description.

The Gold King Mine near Silverton, Colorado is a historic gold mine at approximately 11,300' elevation. The mine has a continuous discharge of acidic mine drainage that is a significant contributor of manganese, zinc, copper, and cadmium into the Cement Creek drainage of the Animas River watershed. The Gold King Mine has not had maintenance of the mine workings since 1991, and the workings have been inaccessible since 1995 when the mine portal collapsed.

The EPA Region 8 has been investigating the conditions to assess the on-going releases and incremental de-watering and removal of blockages to prevent blowouts.

**1.1.2.1 Location** - San Juan County, Colorado, La Plata County, Colorado, Southern Ute Indian Reservation and Ute Mountain Ute Tribe reservation.

#### **1.1.2.2 Description of Threat**

Mine waste water was released into Cement Creek and the Animas River. The volume of the release based on US Geological Survey (USGS) Cement Creek gaging station is estimated at three million gallons. The initial environmental concern was the pulse of contaminated water containing sediment and metals discharged in Cement Creek which flows into the Animas River through Durango, Colorado, and into New Mexico where it joins the San Juan River before flowing into Utah. The City of Durango relies on the Animas River as one of its main water sources - the Animas source is off-line. The river is also used for recreational purposes, including fishing and rafting, and is an important cultural resource for the Navajo Nation.

The leading edge of the release passed through Durango, Colorado, on Friday, August 7, 2015, and on August 8, 2015, it crossed the border into New Mexico where it eventually discharged into the San Juan River.

#### **1.1.3 Site Inspection Results**

Aerial and ground reconnaissance indicates that the plume associated with the Gold King Mine release has dissipated downstream and there is no leading edge of contamination visible in downstream sections of the San Juan River or Lake Powell.

The EPA is collecting and assessing water quality from Cement Creek and the Animas daily. Water sampling is occurring, and pH levels and dissolved concentrations of metals are being monitored.

### **1.2 Incident Objectives**

- Continue private water well call tracking, follow up actions and owner communications.
- Continue sampling plan and develop strategy to mitigate risks due to sediment in the river.
- Continue river assessment through sediment and water sampling.
- Continue management of adit discharge and develop call down verification (CDPHE).
- Effectively communicate with public and stakeholders utilizing a multi-faceted communication strategy to dissemination results.
- Ensure health and safety of the public and response management personnel.
- Develop a means to assess the economic impact upon affected communities
- Coordinate with the Colorado Division of water and other stakeholders to assess and begin flushing ditch status
- Provide water of appropriate quality for specified use.
- Develop Veterinarian Consortium, including Colorado Extension.
- Continue to treat water at the mine.
- Stabilize mine road to ensure access 8/12/15.

- Prepare for mine dump stabilization.
- Continue adit discharge management, treatment and sampling.

### 1.3 Critical Resource Needs

All resources are being tracked by the Resources Unit. Resources for the response continue to be ordered as needed to fill critical resource needs.

### 1.4 Strategic Considerations

United group of specialist to advise policy makers.

## 2. Current Activities

### 2.1 Operations Section

#### 2.1.1 Response Actions to Date

A Colorado Unified Command (UC) post in Durango was established on 8/7/2015 and expanded on 8/10/2015 to full staff levels. An EPA Unified Area Command (AC) was also moved to Durango on 8/10/15. The UC includes EPA, State of Colorado Office of Emergency Management (OEM), Southern Ute Indian Tribe, La Plata County, and San Juan Basin Health Department. The Ute Mountain Ute Tribe may join during the next operational period. The EPA Regions 6 and 9 have established incident command posts in Farmington, New Mexico that cover New Mexico and the Navajo Nation response areas. **A JIC was established 8/7/2015. It is providing support for both the UC and the AC.**

The EPA initiated a water quality sampling effort on August 5, 2015, to assess the impacts of the release at the Gold King Mine. There were a total of 5 sampling teams deployed on Monday, 8/10/2015, three from the EPA Region 8 and two from Colorado Department of Health and the Environment (CDPHE). There were four river and 30-40 well water samples collected August 10, 2015. The EPA collected surface water quality samples from seven locations; two of these locations were on Cement Creek, and five of these were on the Animas River in Colorado. Well samples were also collected upon request. These locations were selected based on the availability of an historical dataset for these locations. These analysis of these samples include pH, dissolved concentrations of metals, and operational milestones. The CDPHE collected samples from raw and finished drinking water supplies and water samples from the northern segment of the Animas River.

On Tuesday, samples from 19 of the 20 planned sediment sampling locations were completed by the EPA (contractor) sampling teams. **No additional sediment samples were taken on Wednesday 8/12/2015.**

Daily residential sampling is occurring. There were 20 private drinking water samples taken on 8/11/2015 with a total 49 of through the end of 2/11/2015. **On 8/12, 36 private drinking water samples were collected, including duplicate quality control samples for a total of 80 wells that have been sampled. A system to prioritize and track water well sampling is under development.**

**As of 5:00 pm 08/12/15, the Call Center (970-385-8700) had received 591 calls. 284 of those calls were related to well testing, ditch monitoring/cleaning, and agricultural water questions. The balance of the calls were general in nature, relating to recreational use, wildlife concerns**

etc. Effective 08:00 08/13/15, calls from the 800 number set up by EPA are being forwarded to the local Call Center.

Bottle water shipments from local suppliers have been occurring daily and distributed as requested.

A pilot test flush of the Animas Consolidate Irrigation Ditch was conducted late day on 8/12/2015. The purpose of the test was to visually evaluate sediment transport conditions that would occur upon partially opening the control gate. Ferrous sediments were observed to have been deposited bank to bank in the channel as a result of the mine release. Field measurements of pH were generally over 7 .0 standard units. Conductivity at the downstream sampling location was monitored and dropped over the course of the test as increased flow reached the monitoring point. Dissolved oxygen was indicated to be greater than 7.0 mg/l during the test.

Based on the information from the test, the UC approved flushing the Animas Consolidate Irrigation Ditch and Reid ditch over the night of 8/12-13/2015. The pH and conductivity were logged overnight and will be included in the next SITREP.

**Non-Potable water distribution as of 8-12:**

**Total deliveries: 22 (many are repeat deliveries)**

**75,580 Gallons**

**Stakeholders:**

- Cattle & Horse Farms
- Nursery
- Fish Hatchery/Fish Ponds
- Commercial organic produce farm
- One operation, we have set up pumping and filtration from river to fill fish ponds.

**Potable Water Delivery as of 8-12:**

**Total Deliveries: 6 (Repeats)**

**29,000 gallons**

**Stakeholders:**

- Single Family Home cisterns.
- Multiple family homes on neighborhood cistern.

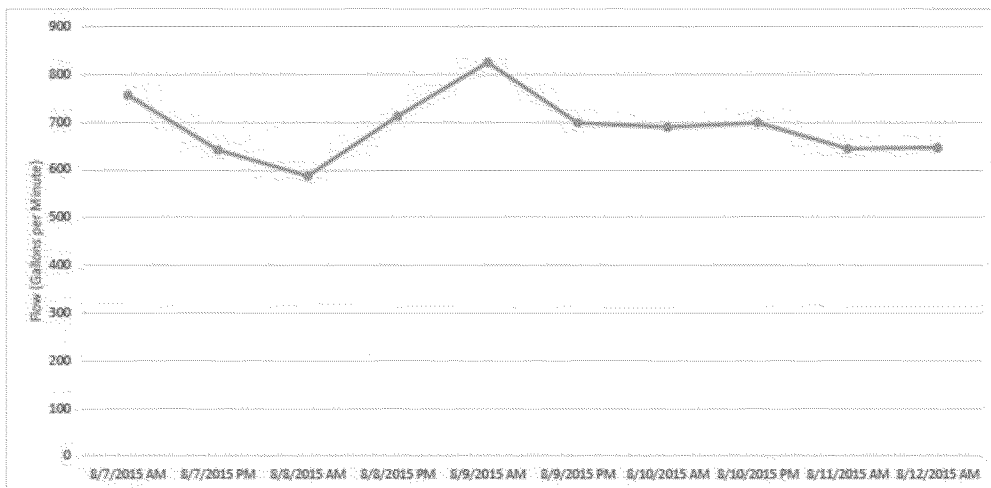
**1120 cases of bottled water have been purchased to hand out to community.**

The CDPHE, and public water systems regulated by CDPHE in the impacted area, are taking raw and finished water samples to monitor water quality. CDPHE is coordinating with City of Durango drinking water treatment staff regarding the Animas River intake. It was not in use at the time of the event and has been off-line pending water quality assessment with CDPHE and completion of irrigation canal flushing.

**CDPHE has 7 staff in area and continued collecting the Animas River surface water and sediment sampling. Also continued outreach to public water supply system operators.**

Public system operators are continuing normal testing of their systems

The EPA continues to operate four treatment and sedimentation ponds at the mine site which are treating water by lowering acidity levels and removing dissolved metals. Flow from the mine through the morning of 8/12/2015 is shown in the following chart. **As of 11 am on 8/13/2015, there was no available updated water discharge data available.**



Treated water from the last treatment pond is discharging into Cement Creek at levels cleaner (higher pH and lower levels of metals) than pre-event, background conditions in the creek. Flow data out of the mine is being collected manually two times per day. Water quality data is being collected at the influent and effluent of the treatment system as well.

Colorado Parks & Wildlife officials have been monitoring the effects of the spill on terrestrial & aquatic wildlife since the incident began. To date we have seen no indication of widespread fish mortality in the Animas or San Juan. Fish cages placed directly in the Animas River by the State of Colorado Division of Parks and Wildlife (CDPW) for two days indicate one mortality out of 108 fish tested. CDPW pulled the fish from the Animas on 8/11/2013 and they were preserved for necropsy and toxicity (tissue analysis). There was no additional fish mortality after the initial one fish mortality. **CDPW is working to collect wild fish.** The state of Utah has been sampling along the San Juan River in

proximity to Lake Powell.

### **2.2.1 Anticipated Activities**

**There will be seven sample teams, five from the EPA working on collecting private well and sediment samples on the Animas River. County personnel are joining the EPA for 8/13/2015 sampling and collecting split samples. CDPHE has two sample teams collecting water well and sediment samples from the Animas to help determine if there was any impact from the ditch flushing on river water quality. Sampling of the seven data points on the river will continue. Durango area operations are focusing on the ditch and water survey work.**

**A technical expert from CDPHE will be assisting at the Gold King Mine site in optimizing the water quality treatment system.**

Sampling procedures and a sampling plan are being established and shared with all relevant parties to ensure consistency.

The EPA Region 8 is distributing bottled water to citizens, and both potable and non-potable water for livestock and other agricultural purposes, as needed.

### **2.2.1.2 Next Steps**

### **2.2.2 Issues**

**2.3 Logistics Section** - No information at this time

**2.4 Finance Section** - No information at this time

### **2.4.1 Narrative**

### **2.5 Other Command Staff**

#### **2.5.1 Safety Officer**

**As of Wednesday August 13<sup>th</sup>, there are zero response related injuries or illnesses to report. As operations continue, the safety team would like to emphasize the importance of safe driving and highlight the fact that a portion of U.S. Highway 550 is listed as one of the twelve most dangerous roads in the world. We would like everyone to practice safe driving techniques, have a heightened awareness of wildlife, and obey all traffic laws including distracted driving. As the response continues please stay hydrated and make every effort to get enough rest.**

#### **2.5.2 Liaison Officer**

The Colorado Fish and Wildlife Conservation Office is monitoring effects on wildlife and aquatic life in the affected area.

The EPA Region 8 has contacted the US Fish and Wildlife Service and the US Department of Interior about the incident, and is working with the US Geological Service on water flow

data in Cement Creek and the Animas River.

#### 2.5.3 Information Officer

A last press release done on August 10, 2015.

#### 2.5.4 Weather Forecast

##### **Weather forecast for August 13 and 14, 2015:**

##### DURANGO AREA

###### Today

Isolated showers and thunderstorms after 2pm. Mostly sunny, with a high near 85. Light and variable wind becoming northwest 5 to 10 mph in the afternoon. Chance of precipitation is 20%.

###### Tonight

Isolated showers and thunderstorms before 9pm. Partly cloudy, with a low around 56. West northwest wind 5 to 10 mph becoming north northeast after midnight. Chance of precipitation is 20%.

###### Friday

A 10 percent chance of showers and thunderstorms after 11am. Mostly sunny, with a high near 87. Light and variable wind becoming west 5 to 10 mph in the afternoon.

###### Friday Night

A 10 percent chance of showers and thunderstorms before 7pm. Partly cloudy, with a low around 55. West wind 5 to 10 mph becoming north northeast after midnight.

##### SILVERTON AREA

###### Today

Scattered showers and thunderstorms, mainly after noon. Partly sunny, with a high near 71. South wind around 5 mph becoming west in the afternoon. Chance of precipitation is 50%.

###### Tonight

A 30 percent chance of showers and thunderstorms, mainly before 8pm. Mostly cloudy, with a low around 43. West northwest wind around 5 mph becoming calm.

###### Friday

A 30 percent chance of showers and thunderstorms, mainly between 10am and 4pm. Partly sunny, with a high near 72. Calm wind becoming west around 5 mph in the afternoon.

###### Friday Night

A 20 percent chance of showers and thunderstorms before midnight. Partly cloudy, with a low around 43. Calm wind becoming south southeast around 5 mph.



### 3. Participating Entities

#### 3.1 Area Command

The EPA Region 8 is coordinating with the EPA Regions 6 and 9, the states of Colorado and Utah, the Southern Ute Tribe and the Ute Mountain Ute Tribe. The EPA Region 6 is working closely with the New Mexico Environment Department (NMED) to evaluate possible impacts in Mexico. The EPA Region 9 is working with the Navajo Nation to evaluate possible impacts to the Tribe. Potentially impacted water systems have been notified, and precautions are in place to ensure drinking water is protected. The EPA and NMED are providing assistance to community water systems and closely monitoring the situation.

The EPA Region 9 has contacted the Bureau of Indian Affairs regarding potential impacts to the Navajo Nation.

#### 3.2 Unified Command and Cooperating Agencies

The UC includes EPA, State of Colorado Office of Emergency Management (OEM), Southern Ute Indian Tribe, La Plata County, San Juan Basin Health Department. The Ute Mountain Ute Tribe will likely join during the next operational period.

The City of Durango is involved through an agency representative. San Juan County is an Agency Administrator.

The EPA Region 8 is coordinating with Agency for Toxic Substances and Disease Registry (ATSDR) in response to public health concerns/questions associated with the mine waste plume. ATSDR has been in communication with local health officials at San Juan County Basin Health Department in Colorado. Public health questions should be directed to Chris Poulet, ATSDR.

### 4. Personnel On Site

Gold King Mine Release 2015	
	08/12/2015
Group	Number
EPA @ REOC	13
Contractors @ REOC	2
EPA in Field (R8)	23
Contractors in Field (R8)	12
EPA Laboratory	8
Contractors Laboratory	7
USCG	10
ERT	1
Subtotal EPA Region 8 Resources	76
Colorado OEM	2
Southern Ute Tribe	6

La Plata County	14
San Juan County	2
CDPHE	7
Southwest IMT	7
City of Durango	11
Durango Fire	2
San County Health Dept.	6
<b>Total*</b>	<b>133</b>

\*A badging system is being implemented on 8/13/2015 and personnel count will be confirmed.

**5. Definition of Terms** - No information available at this time.

**6. Additional sources of information** – [epa.gov/goldkingmine](http://epa.gov/goldkingmine)

**7. Situational Reference Materials** - [epa.gov/goldkingmine](http://epa.gov/goldkingmine)

#### Acronyms Used in the Situation Report

EPA = United States Environmental Protection Agency  
 CERCLA = Comprehensive Environmental Responsibility, Compensation and Liability Act  
 CDPHE = Colorado Department of Public Health and Environment  
 USGS = United States Geological Survey  
 UC = Unified Command (Comprised of Southern Ute Indian Tribe, Ute Mountain Tribe, La Plata County, San Juan Basin Health Dept, State of Colorado)  
 AC = Area Command (Comprised of EPA Regions 6, 8 and 9)  
 NMED = New Mexico Environment Department  
 BIA = Bureau of Indian Affairs  
 COEM = Colorado Office of Emergency Management  
 CDPW = Colorado Department of Parks and Wildlife  
 SWIMT = South West Incident Management Team  
 MSDS = Material Safety Data Sheet  
 PPE = Personal Protective Equipment  
 USCG = United States Coast Guard  
 ERT = EPA Emergency Response Team  
 REOC = EPA Regional Emergency Operations Center